

MAY 1993

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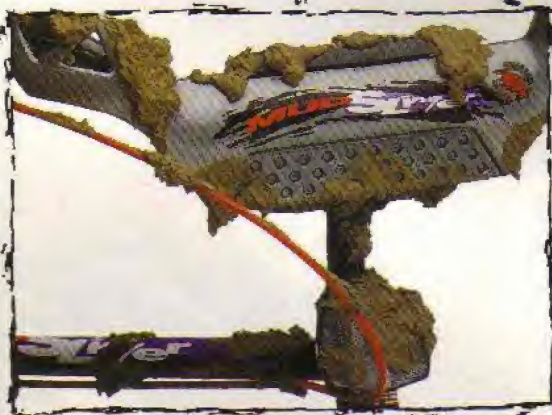


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On Our Cover

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Leaf Relief

What did the plant say to the hungry caterpillar?
"Leaf me alone!"

Okay, plants don't tell jokes to bugs. But they do send a message with a punch line. Researchers have now found that tomato plants use signals to shoo away bugs.

When an insect chews on a leaf, the damaged leaf alerts the



rest of the plant. The signals are passed from plant cell to plant cell. Eventually, other leaves pick up the signal. That's when the plant starts fighting back.

The leaves begin producing chemicals. These chemicals make it hard for the bug to digest the leaf. If the bug stays on a leaf too long trying to eat, it may be eaten by predators. So it moves on.

Looks like a leaf doesn't take much grief, after all!



Head Hunters

If you think wearing a bike helmet isn't cool, don't bike in New Jersey.

Any kid in New Jersey caught riding without a helmet will get a ticket from the police! It's part of a new bike helmet law for kids under 14.

First-time offenders have to fork over \$25. The second time you get busted without a helmet, you might pay a \$100 fine!

This may not sound so fine. But according to bike safety experts, wearing a helmet can save your life. So use your head and a helmet—wherever you live.

Story suggested by Ashley Scholer, Tucson, AZ.

PHOTO © BARRY HENNINGSS



PHOTO © NATIONAL SAFE KIDS CAMPAIGN

Let's Be Brief

It's a car....It's a suitcase....No, it's a suitcase car!

The "suitcase auto" weighs 70 pounds and takes only a minute to put together. Then the gas-powered luggage is ready to go—at about 12 mph.

Now that's what you call a *travel bag*.



PHOTO © MAZDA

Chimp Ahoy!

What has a face like a koala, fur like a zebra and is small enough to fit in a coat pocket? The answer: Maues marmoset (say: *mah-WAYS MAR-mah-SET*).

Sounds like monkey business? Well, it is! A marmoset is a monkey. And scientists recently found a new type of marmoset near the Maues River in the Amazon rain forest. It's the third new type of monkey discovered in Brazil since 1990.

So far, scientists don't know much about the pocket-size monkey. But one thing they do know is lots of undiscovered plants and animals exist. (Of the millions of possible species in the world, only 1.4 million are known.)

So who knows? There could be many more monkeys out there monkeying around!

Story suggested by Brad Walker, Cumberland, MD.

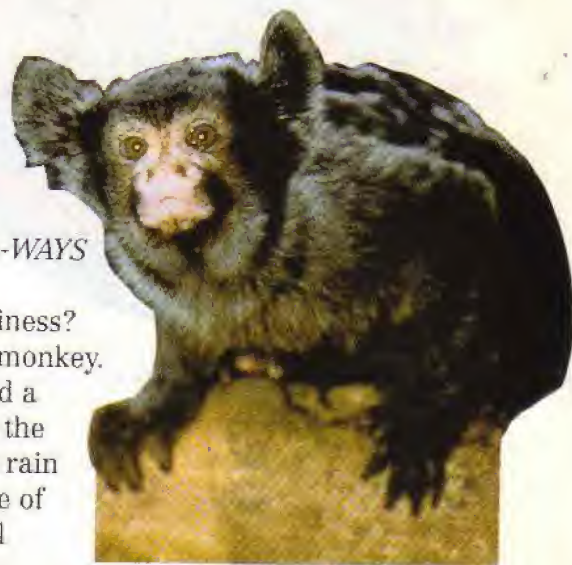


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Shoe Fly

Thanks to these special sneakers, astronauts can now hang 10. The European Space Agency in the Netherlands has come up with the new shoes for astronauts to use in orbit.

They look like ordinary sneakers. The difference is they have small suction cups on the bottom of each shoe. The suction cups grip floor, walls, and ceiling. That way, astronauts can walk around in a weightless shuttle.

To get around until now, U.S. astronauts have had to stick their feet into loops placed throughout the shuttle. So just think what a new pair of sneakers could do for the human race in space!

Story suggested by Eric Stauber, Fairview Park, OH.



PHOTO © ESA



So What's New?

You tell us and you'll get a nifty CONTACT T-shirt—if we print your story. Send us any science story from the news that you think our readers would like to know about. (Be sure to tell us your T-shirt size and where you heard the story.)

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ANY QUESTIONS?

By Christina Wilsdon
and Kathy Vitton



WHAT

CAUSES A BURP?

B-U-R-R-P! Sounds gross? Yep. But sometimes you can't help it. Everybody burps once in awhile.

A burp gets its start when you swallow air. Usually that happens when you eat or drink in a hurry. Sometimes people swallow air when they're nervous or excited. But why should air inside you cause a burp?

You take in air all the time. Usually it goes down the windpipe to your lungs, like it's supposed to do.

But sometimes, the air takes the wrong path down your throat. It goes down your food tube, or esophagus,

instead. When it reaches your stomach, the air forms a bubble.

Sometimes the bubble just disappears. Nobody knows exactly why. But other times, it comes right back up again. Traveling up the esophagus, the bubble comes with a funny noise. BURP! Oops! Excuse me.

Question sent in by Lizzy Stuart, Twin Falls, ID.

WHY

DO JETS LEAVE BEHIND A TRAIL IN THE SKY?

To find their way back home? Actually, a "jet trail" is just a bunch of tiny ice crystals.

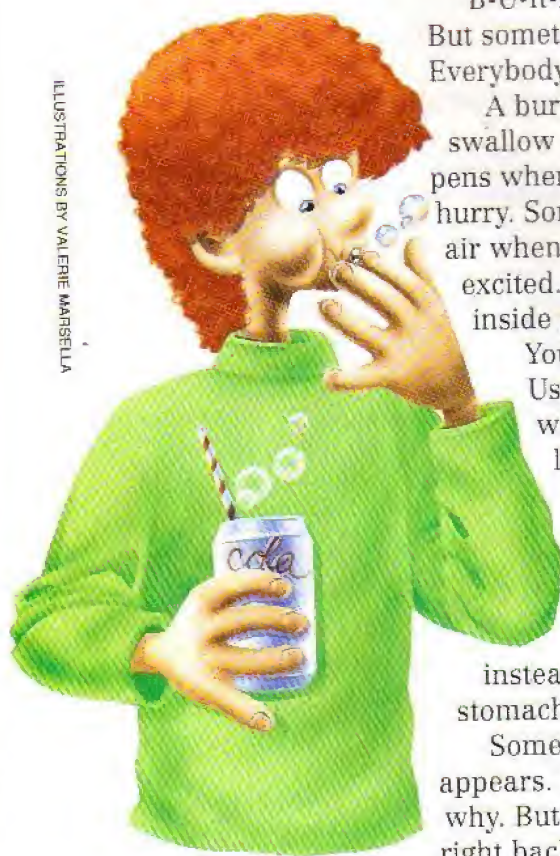
When a jet airplane burns fuel, it also releases water vapor into the air. Since jets fly very high (about 30,000 feet), this air is extremely cold. The cold air instantly turns the water vapor into ice crystals.

The ice crystals spread out and leave a trail behind the jet. Scientists call this icy path a "contrail."

Contrails can hang in the air for a long time. If there are many of them spread out, they can blot out the sun. This causes the temperature to drop a few degrees.

But usually, they aren't up in the air for long. After several hours, the chalky-looking trails have been completely erased.

Question sent in by Chrissy Hart, Fort Myers, FL.



ILLUSTRATIONS BY VALERIE MARSELLA

HOW

DOES A MICROWAVE OVEN WORK?

ZAP! In just two minutes, a rock-hard frozen burrito turns into a steamy snack thanks to your speedy microwave oven.

A regular oven takes more time to cook food. It first must heat air, which cooks the outside of the food. This heat then travels to the food's inside. But microwaves don't heat the air. They only heat the food—from the inside out.

Microwaves are a kind of "electromagnetic" wave, as are light and radio waves. A device called a "magnetron" makes microwaves inside the oven. The magnetron shoots the microwaves at a fan called a "stirrer." The fan's metal blades reflect the waves into the part of the oven where the food goes.

The microwaves bounce around until they enter the food. There, they cause water and fat molecules to twist and turn. This movement makes heat—just as rubbing your hands together does. The heat cooks the food. And it's snack time!

Question sent in by Joel Flasher, Ephrata, PA.



DO

BUGS SEE ULTRAVIOLET LIGHT?

"Ultraviolet" is a form of light that is invisible to humans. We can't see them—but ultraviolet, or UV, rays from the sun can give us sunburns.

Bees can see UV light. So can butterflies and many other kinds of insects. In fact, many flowers look totally different to insects than they do to humans. Insects may see dark markings on a plain white flower. Like signposts, the markings point right to the nectar! These markings are called "honey guides."

Insects aren't the only ones that dine by UV light. Arachnids, such as scorpions and spiders, use UV light to attract insects. Spiders weave webs that reflect UV light. A scorpion's tough skin reflects UV light rays.

Scientists have also found that some insect wings reflect UV rays, too. They think these patterns might help insects find mates.

Humans can see these flower, web and wing markings only under UV lamps. So a bud we think is dull might look just "bee-utiful" to a bee!

Question sent in by Amanda Knapp, Leon, WV.

**Do you have a question
that no one seems able to answer?
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"I lived my life for drugs. I was an addict—addicted to every kind of drug I could get my hands on. After I started, my life was all down hill." —16-year-old girl

Why do many kids use drugs even though it hurts them and everyone around them? Why do 100,000 elementary-school kids get drunk once a week? Why is drug use going up among young kids—even though they keep hearing "Just say no"? We asked Stacey Reynolds to help answer these questions, and others.

Stacey works for the American Council for Drug Education (ACDE) in Washington, DC. The ACDE is a national group that teaches people about the dangers of drug and alcohol use.

Here's how she answered the questions kids have asked CONTACT about drugs and alcohol.

Q Why do some kids start using drugs?

A Peer pressure is the number one reason most kids start to use drugs. According to ACDE polls, one in every four fourth-graders feels some pressure from friends to use marijuana. One in every three feels the same pressure to drink wine coolers.

A lot of kids try alcohol because it's around the house. They may see their parents drink beer or wine. They know that if they want to try some, they can just open the refrigerator or the liquor cabinet.

Q How do people get hooked on drugs?

A People get hooked by using them over and over—and then discovering they can't stop. This is called addiction. The younger you are, the easier it is to get addicted. That's because your bones, muscles and brain are still growing. And a growing body is affected by drugs or alcohol much more strongly. Younger kids become addicted to drugs much faster than older users. A 12-to-14-year-old becomes addicted to alcohol in less than six months. For younger users, addiction can begin after a few uses.

KIDS ABOUT

By Lisa Feder-Feitel

ASK DRUGS

Q If you were a kid and you felt pressured to take drugs, how would you say no?

A I'd probably use a few of the good ideas that kids have shared with me:

- Just walk away. Don't say a word. When you don't get into a conversation, but just leave, most people get your message loud and clear.
- Think of something else to do. You could say, "No. Let's play Nintendo." (Or shoot some hoops or go roller blading.)
- Make an excuse. Say you're allergic to whatever's being offered. Or blame your family: "No. My parents would kill me if I tried that!"

Q What should you do if one of your family members is using drugs? How can you help them?

A Don't cover up for the user. Say, for example, your sister used drugs or alcohol and she can't get up in the morning. Don't make excuses for her to your parents, like, "She stayed up late...I think she has a stomachache." Excuses help your sister keep hurting herself.

Find someone you can trust—a parent, teacher, school counselor, member of the clergy—and tell him or her about it. This person can help you get the kind of help you need for a friend or family member.

You may create problems for yourself by "telling" on someone.

But by doing it, you're being the best friend you can be.

Q Why are drugs bad for your body and brain?

A Drugs and alcohol can change the messages your brain sends to your body. For example, they may prevent your body from growing as tall as it might normally. They can make you lose memory and concentration. This might prevent you from learning as well. Drugs can make you clumsy, so you have a tougher time playing sports. Pimples and bad breath can come with drug and alcohol use, too. ☞

Q Is alcohol as bad for you as drugs?

A Drinking is the biggest problem among elementary-school kids. Among American 12-year-olds, one in every 10 drinks alcohol. It's around, in most kids' houses. And parents drink it. But that doesn't mean it's not harmful—especially to kids. Alcohol can be just as bad for your body as any other drug. In fact, because it's so available, it's often easier to get hooked.

Alcohol, like other drugs, can prevent you from growing as tall or as strong as you might without it. It can make you clumsy and absent-minded. It can also hurt your heart and liver. And it's as hard to stop using as any other drug.

Q If you get hooked on drugs, how can you stop using them?

A It's hard to stop, especially without help. If you can't tell your parents about it, find another adult you

trust. Groups like Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) have telephone hotlines, which are listed in your phone book's Yellow Pages. The groups will help you, or put you in touch with someone who can.

But the best way to stop using drugs is never to use them in the first place. Because once you get hooked, it's hard to stop. And you're not just hurting yourself when you use drugs or alcohol—you end up hurting everyone who cares about you. ♦



Smoking marijuana (pot) destroys your memory and makes it hard to learn new subjects.

Like tobacco, marijuana can cause lung cancer, breathing problems and coughing.

Cocaine increases heart rate and blood pressure suddenly. An overdose of cocaine can kill you.

Alcohol slows brain cell activity. It makes you dizzy, numb and slurs your speech.

Alcohol irritates your stomach. It can cause a painful bleeding ulcer.

Alcohol damages the liver. Then all food and drink passing through it become poisonous to the body.



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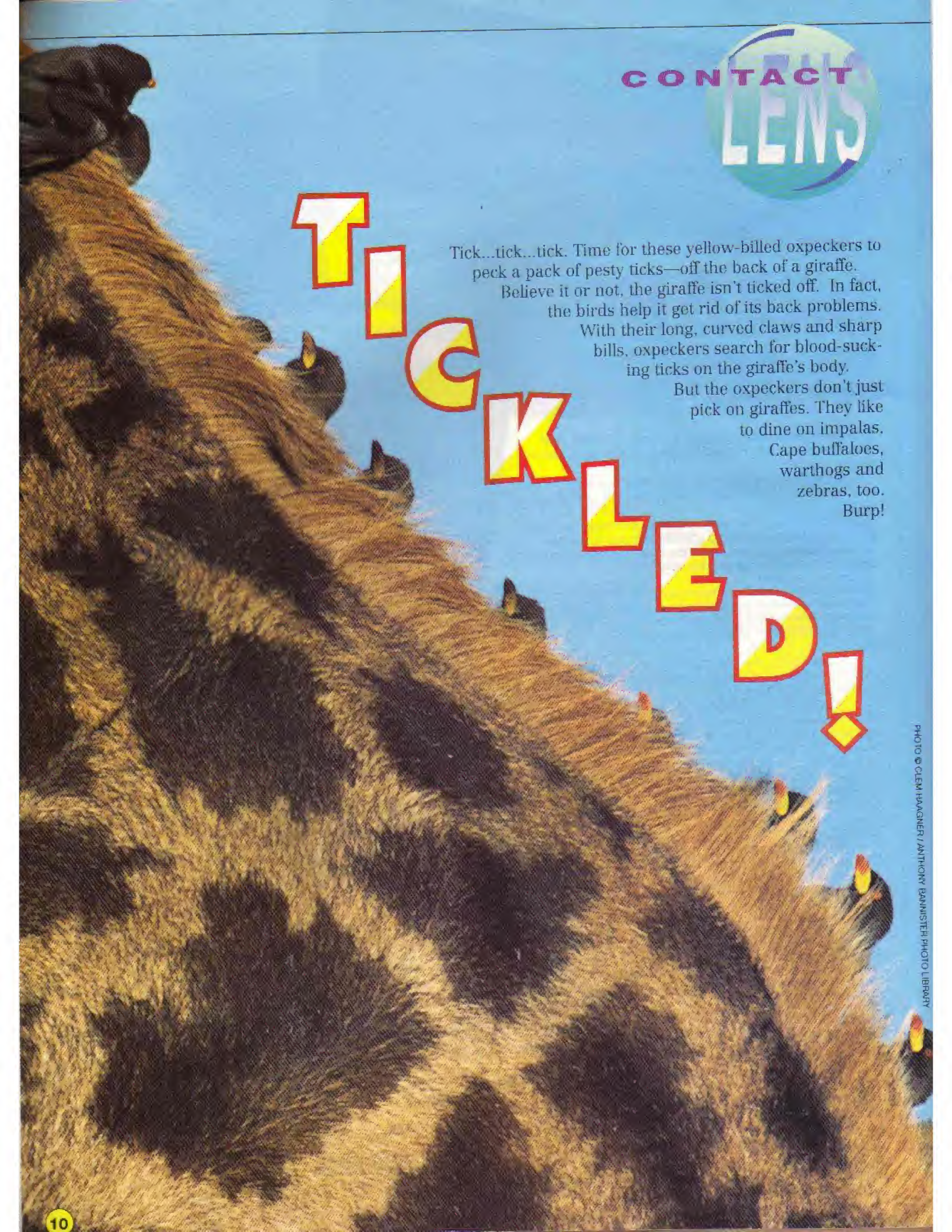
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TICKLED!

Tick...tick...tick. Time for these yellow-billed oxpeckers to peck a pack of pesty ticks—off the back of a giraffe.

Believe it or not, the giraffe isn't ticked off. In fact, the birds help it get rid of its back problems.

With their long, curved claws and sharp bills, oxpeckers search for blood-sucking ticks on the giraffe's body.

But the oxpeckers don't just pick on giraffes. They like to dine on impalas.

Cape buffaloes, warthogs and zebras, too.

Burp!



CHALLENGED

Dear CONTACT,

In the article "The Lost City of Ubar" (November '92), you said that the Space Imaging Radar (SIR) was on the space shuttle *Challenger*. But the *Challenger* blew up.

Celeste Foster
Brawley, CA

We're both right, Celeste. In 1984, the space shuttle Challenger recorded images of the Oman desert. This mission took place before the Challenger exploded on January 28, 1986.

SPEED RACER

Dear CONTACT,

In your November '92 issue, a Factoid said that ostriches can run up to 44 mph. Is this true or is that a mistake?

Stephanie Wilson
Gardena, CA

Believe it or not, Stephanie, this isn't a mistake. The ostrich's strong, heavy legs help it to run faster than any other bird—and faster than many land animals. It usually runs at a speed of 35 mph, but it can race as fast as 45 miles per hour.

BUGGED BY BUGS

Dear CONTACT,

I think that the article on bugs called "Jiminy Crickets!" (November '92) was very interesting. I can't believe people eat terrible-looking, terrible-smelling bugs. Disgusting! How can people do such a thing?

Angela Gutierrez

Angela, we had lots of readers write and tell us how grossed out they were by the bugs. But for some people, eating bugs is as normal as eating pizza. And to everyone who asked, yes, the bugs on the cover and in the story were real!

WE WANT MAIL!

Dear Readers,

We love hearing from you. Your questions and ideas help us make CONTACT a better magazine. So why not drop us a line? We can't answer every letter, but we do read them all. Send your mail to:

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FUTURE FILE

IN THE FOOD-TURE

Leftovers again? Not for tomorrow's chow hounds. Supermarket machines will automatically plan each meal for shoppers! Plus, they'll tell exactly how much food is needed—so leftovers will be ancient history!

What's for dinner? Check out these fab foods:

Hold the pickle. Hold the lettuce. And, oh yeah, hold the patty, too. For health and cost reasons, people will be eating less red meat and more meat substitutes. One substitute already on the market is a kind of fungus mixed with algae. It sounds gross, but it supposedly tastes like steak. At least that's what cows hope you'll think!

FUNGUS BURGERS



FIELD & STREAM

What do you get when you cross a fish with a tomato? We don't have a clue, but scientists at a plant lab are trying to find out. They're working on a tomato that's injected with a certain fish gene. This gene makes it possible for fish to live in cold water. Tomatoes injected with the gene survive frost.

By 1996, this de-fish-ous tomato should be in your supermarket's fish section...or veggie section...or fruit section...or somewhere!

Here's something for your taste "spuds": Potato ice cream! Potato flakes will someday replace all the milk solids in ice cream. Scientists are working on a special process that turns potato starch into fructose. (Fructose tastes a lot like sugar but has fewer calories.) Best of all, this sweet treat will come in chocolate, vanilla and strawberry.

FROSTED FLAKES



IN A PICKLE

Are you in a sour mood? Then you'll be pickled, er, tickled to hear this: You'll soon be able to pick a mix that makes pickles quicker! How? Add water, Pickle Quick dry mix and a bunch of cucumbers. In just half the time it usually takes, you'll have a pack of pickles!

—Wendy Williams



By Beth Chayet

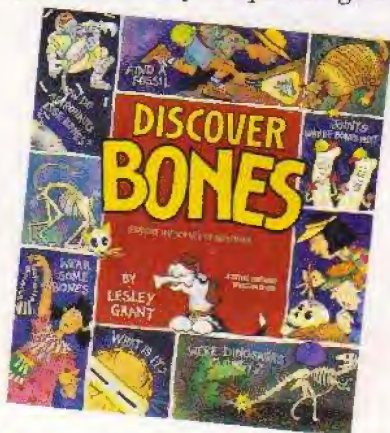
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by Lesley Grant

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ALL
FOR

By Andrew Ragan

You're listening to the Top 40 Countdown on your boom box when a weird voice breaks in. "Attention Earthlings!" it says. "This is Bantor from the planet Pyron in the Constellation Zebo. We have received a transmission from you humans. You are not alone in the universe..."

Sound amazing? Well, the truth is, such a message coming over your boom box isn't likely to happen. But the idea of us Earthlings receiving signals from extraterrestrials (ETs, for short) may not be so far out.

In fact, NASA, the U.S. space agency, believes there's a good chance we're not alone in the universe. Last fall, NASA began a new project called the High Resolution Microwave Survey (HIRMS). Its aim: to find evidence of life in one of the billions of galaxies in the universe.

The search for intelligent life on other planets isn't new. It began almost 100 years ago. That's when scientists built a huge transmitter to beam radio waves into space. Scientists thought smart beings on other planets might pick up the signals.

Scientists also have beamed a message about humans and our solar system to a nearby constellation. But because the constellation is 25,000 light years away, a return message wouldn't reach Earth for 50,000 years! So don't wait up for an answer.

So far, no ETs that we know of have returned our "calls." But according to Dr. Jill Tarter, an HIRMS scientist, we haven't exactly had our ears wide open. "Now, however," says Dr. Tarter,

"we've built the tools we need to listen well."

Last October, Dr. Tarter switched on the largest radio receiver in the world. It's an enormous metal bowl stretching 1,000 feet across a canyon in the jungles of Puerto Rico.

Meanwhile, another NASA scientist flipped on a huge radio antenna in California's Mojave Desert. NASA hopes these big dishes—and others around the world—will pick up radio signals from new worlds.

Dr. Frank Drake has been searching for life in outer space for years. He explains the HIRMS project this way: To listen to your radio, you move the tuner on the dial until the channels come in loud and clear. Now imagine radio receivers that scan our galaxy "listening" to 14 million channels every second. That's what NASA's radio telescopes in Puerto Rico and California are doing.

FOR SPACE ALIENS

EARS ETs

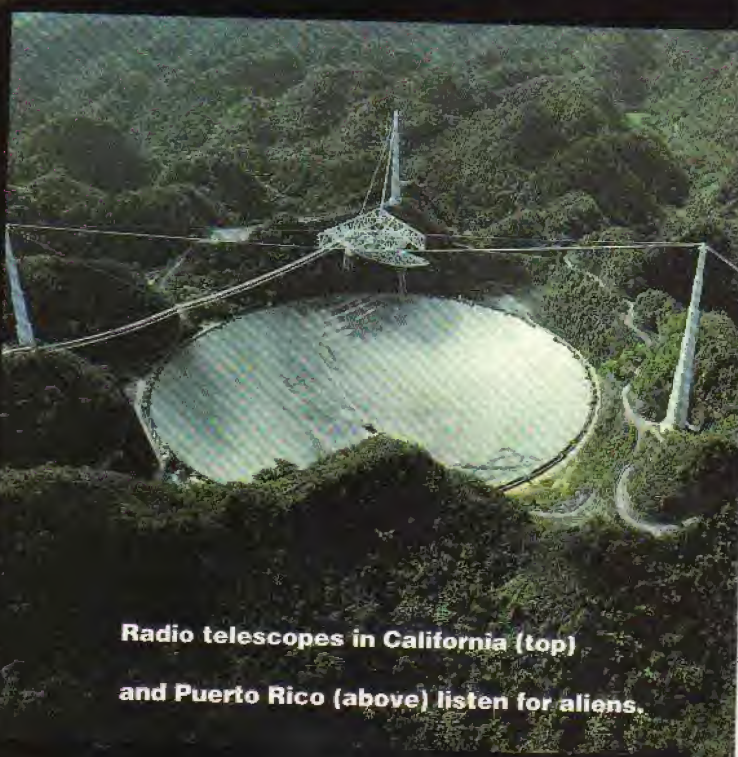
does. And, she believes, some of that life could be intelligent.

That leads right to the next big question: If there are smart ETs out there, are they trying to reach us? There's no way to know for sure. But according to Dr. Tarter, it might not matter. "If they have the technology, their signals may reach us by accident, just as our TV signals might reach them," Dr. Drake is also confident. "I fully expect to find signals from an extraterrestrial before the year 2000," he says.

Not all scientists are that certain of discovering life in other galaxies. But who knows? If Dr. Drake is correct, the year 2000 just might bring us a group of new space neighbors! ☛

But that's not all. Powerful computers hooked to the telescopes sift through every signal. The computers try to match the signals to ones that scientists already recognize, such as human-made signals. If they can't, Drake and Tarter check them out. "It could prove there is radio technology elsewhere in the universe," says Dr. Tarter. "And that would mean we're not alone."

"Whenever I look up at the stars," Dr. Tarter adds, "it seems ridiculous to think we are alone." After all, she reasons, there are billions of galaxies like our own. And in each of those galaxies are hundreds of billions of stars like our sun. Since each sun might also have planets, it's very likely that some of those planets support life as Earth



**Radio telescopes in California (top)
and Puerto Rico (above) listen for aliens.**

PHOTO © STEPHANIE MAZE / WOODFIN CAMP & ASSOCIATES, INC.

PHOTO © PETER MENZEL



VISIT EARTH

A GUIDE FOR BEINGS

This is your first visit to Earth. It's a terrific little planet. But you must deal with life-forms with only two arms and legs—and who can't even read minds! So it's not going to be an easy trip.

This Intergalactic Travel Guide has come up with some information to help you have a pleasant, fun vacation. Before you go, remember this important travel hint: Earthlings are not digestible.



TOURIST TRAP

Five things Eborians don't like about Earth:

- Gravity
- Pollution
- TV commercials
- Too many endangered animals
- A roller coaster on a full stomach

Stuff from Earth any Eborian kid would want to bring home:

- ★ Pizza to Go—with the works
- ★ X baseball cap

- ★ Videotape of *The Simpsons*
- ★ X-Men comic book
- ★ Pump sneakers
- ★ Troll dolls
- ★ Frisbee
- ★ A T-shirt that reads: "My folks went to Earth and all I got was this lousy T-shirt!"

SOUVENIR STOP



HIGH FIVE!

Five Eborian fave raves about Earth:

- ★ Lots of different ice cream flavors
- ★ Alien 3 video game
- ★ Roller blades
- ★ Statue of Liberty
- ★ MTV



PHOTO © PARAMOUNT PICTURES

PHOTO COURTESY PHOTOFEET

RING RTH

FROM THE PLANET EBOR

STARMEN MEET THE STARS

Ten Earthlings
that Eborians
should definitely
meet:

- ★ President Clinton
- ★ Michael Jordan
- ★ Kim Zmeskal
- ★ Nelson Mandela
- ★ Arnold Schwarzenegger
- ★ Marky Mark
- ★ TLC
- ★ McCauley Caulkin
- ★ Sally Ride
- ★ Kris Kross

Ten aliens
that
have already
contacted
Hollywood

- ★ E.T. ★
- Mr. Spock
- ★ Yoda ★
- Lt. Worf
- The Thing
- ★ Alien ★
- Wookie
- Kira Nerys
- ★ Alf ★
- Superman

THE CONTEST FROM ANOTHER PLANET

(FOR EARTH KIDS ONLY)

You met a really cool Eborian at summer camp last year. Now he (or is it she? It's hard to tell!) is begging you to visit planet Ebor instead of Camp Winiwacki during vacation.

The object of the contest is to convince your folks why you should go: Come up with a list of five amazing things that your friend has told you about Ebor.

The list that makes us want to go there wins. The prize is a far-out Night Sky Star Stencil kit. Ten runner-ups will each win a 3-2-1 CONTACT T-shirt.

Send your list to: **I'd Rather Go to Ebor, 3-2-1 CONTACT, P.O. Box 40, Vernon, NJ 07462.**

PHOTO COURTESY PHOTOFEST

PHOTO COURTESY FOTO FANTASIES

PHOTO © PARAMOUNT PICTURES

PHOTO COURTESY FOTO FANTASIES

DISK IT!

by Richie Chevat

CD'S ARE THE
HOTTEST VIDEO
GAMES AROUND



PHOTO BY DENNIS MOSIER

You're watching "Hook," the hit movie based on the story of Peter Pan. Captain Hook raises his sharp metal claw and walks toward Peter. Hook grins, "I've got you now, Pan."

"Oh no you don't!" you shout. And with a twist of your video game controller, you make Pan fly away from the pirates, while Hook screams in rage.

Can this really happen? It sure can—with the help of a new generation of video game machines. Companies are making video games more realistic and exciting than ever. And at the heart of the new machines is something you may already have in your home—a compact disk.

"CD's are the big news in video games now," says Seth Meyers. He helps design games for personal computers, Nintendo machines and other systems.

CD's (CD stands for compact disk) have been around for a while. These smooth, shiny platters have been used mainly to play recorded music. In fact, they've just about replaced the phonograph record. Movies recorded on disks (called laser disks) have also been available for a few years. Now the same CD technology is creating a new type of video game.

"CD's are a big advance over the cartridges that most video games use now," Meyers told CONTACT. "They hold 600 times more information. That means they hold enough data to make real speech, real music and scenes from real movies come out of your TV."

So instead of a cartoon figure that only moves in a few ways, the new CD games have animation as good as any cartoon feature.

CHUCK ROCK AND HOOK © SONY IMAGE SOFT



Or they can show parts of real movies. The new games also include lots of dialogue spoken by actors. And the music sounds as excellent as any CD you'd buy in a record store.

The play action is also super. For example, say you make a decision in a CD-based video game to turn left down a hall. The CD player finds the video image of the new hallway in a fraction of a second. It's like watching a movie in which you control the action.

How are CD's different from computer disks? CD's hold much more information. They also store the information differently. Computer disks store information as magnetic charges in the thin coating on their surface. But CD's store information as a series of small "pits" cut into a layer of plastic. Clear plastic protects this pitted layer from dirt, dust or scratches.

CD's are also much sturdier and longer-lasting than computer disks, but you can't record anything on them—you can only play them back. That's why they're sometimes called CD-ROM. (ROM stands for Read Only Memory.)

Getting Hooked

Some CD players hook up to personal computers. Other CD players can make your television do all kinds of neat things. For example, the Phillips Company's CD-I allows you to show snapshots from a camera on your TV screen. It also plays CD "books." You don't have to read these books—the book reads itself to you!

One of the coolest things about CD's are the games they let you play. Sega has introduced a CD-playing attachment for its Genesis machine. You can play the CD game "Hook" on it. The CD player sells for about \$300—quite a bit of money for a video game machine. But Sega believes that people will pay more to play games that seem so real.

"It's real interactive video, like a movie in which you decide what real live actors will do," says Doug Glen, an official with Sega. "You can

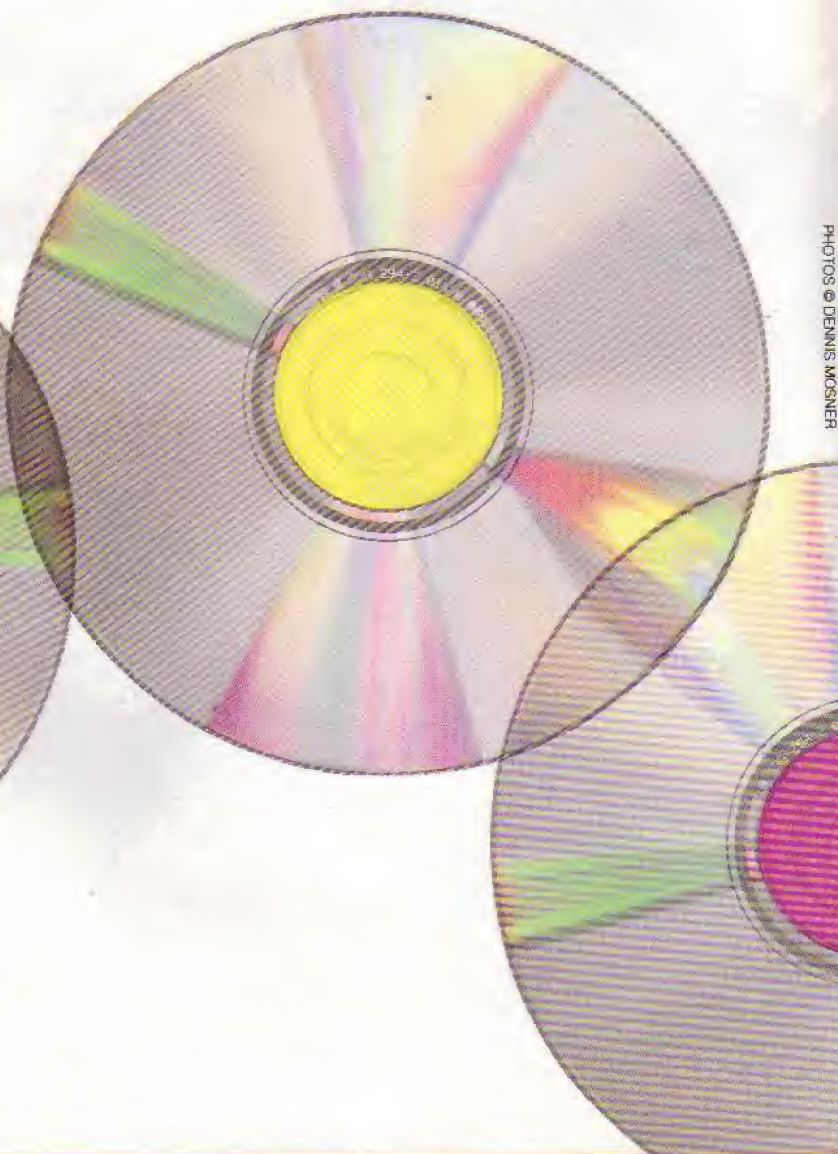
It's The Pits!

Here's a comparison of the amounts of information that different game devices can hold. (A megabyte is approximately 1 million pieces of data: numbers, letters or symbols.)

A computer floppy disk—
1 megabyte

A game cartridge—up to
2 megabytes

A CD—600 megabytes



PHOTOS © DENNIS MOSNER

pilot your space ship or move through a haunted house."

Nintendo also plans to come out with a CD attachment for its video game machine.

One thing a CD can do that a cartridge can't is play real music. Sega is selling two music video disks. They allow you to create your own music video, starring real pop stars like Marky Mark and C+C Music Factory. The disk provides a lot of scenes from music videos, concert films and other movie footage. You choose whatever scenes you want. Then you link them together in any order. Finally, you pick the music to play over the scenes. These and other game CD's cost between \$30 and \$60—about the same as a game cartridge.

The new CD-based game systems may give you plenty of video thrills. But they're still just games. No video game will make you fly through the air with Tinker Bell—until companies start packaging the games with pixie dust. ♦



Laser Light Show

To read the information on a CD, a CD player shines a small laser beam (a highly focused beam of light) onto the disk. Differently shaped pits reflect the light differently, forming a code. The machine uses the code to create sound and pictures.

Disk Discussion

Chasing Captain Hook is just one of the adventures that CD technology has made possible. Here's a sample of just a few of the other CD-based games now available.

Sewer Shark

Sony Imagesoft (for Sega Genesis)

The world has been turned into a maze of sewers, which you must explore while dodging packs of mutant rats. Your mission is to deliver supplies to remote human outposts. The real-action footage makes it seem as though you are jetting through the tunnels.

Joe Montana's NFL Football

Sega (for Sega Genesis)

This animated game gives you a player's-eye view of the action, as you coach your team to the Super Bowl. Football legend Joe Montana has recorded some of his coaching advice. It is played back over the CD sound—along with sound effects like the roar of the crowd and the crashing of helmets.

Carmen SanDiego

Broderbund (for DOS CD-ROM)

First it was a computer game. Then it was a TV show. Now it's a CD game. This version of the popular detective-chase game lets you track the crook Carmen SanDiego through three times as many places as a floppy-disk game. It also can display 130 photographs, and it plays real music selections from the countries you visit.

Just Grandma and Me

Broderbund (for Macintosh CD ROM or NEC MPC)

This software is part of a series called "Living Books." Thanks to CD technology, the pictures in this "electronic book" are animated. As you watch, you hear music, voices and sound effects. Plus you can read or listen to the story in English, Spanish or Japanese.

The Jungle Book

Ebook, Inc. (for DOS CD ROM and Macintosh CD ROM)

This CD is based on the famous story by Rudyard Kipling. The text is on the screen, but the words are also spoken. Pictures on the screen and musical backgrounds make this even more fun.

RED ALERT!



PHOTO © K.H. SMITHAK / PHOTO RESEARCHERS INC.

Red traffic signs shout stop! Red hearts and red roses mean love. And a person's face turning red is often a sign of embarrassment.

When humans see the color red, they pick up lots of red-hot messages. And so do other animals.

All sorts of creatures use red to scare off or warn away enemies, attract mates and round up their

young. For example, when a male robin sees the red breast of another male robin, he attacks. He is protecting his territory. To attract a mate, frigate birds puff out their red throats. And the bright red color of the Mexican general grasshopper warns predators that it tastes bad.

Take a look at some other animals that are always on red alert.

EAT

By Beth Chayet

**ANIMALS
GET THE
MESSAGE...
IN LIVING
COLOR!**

FOUL FROGS

Although pretty to look at, tomato frogs (left) are terrible to taste. They ooze a nasty-tasting substance when anything tries to turn them into a snack. Poison arrow frogs (below) make an even worse meal. They pack enough poison to kill anything that eats one. The bright red color of both animals warns predators: "Eat me and you'll be sorry." After certain animals sample these creatures, they won't eat them anymore. Yeech!



PHOTO © ZIG LESZCZYŃSKI / ANIMALS ANIMALS

RED IN THE FACE

No, these male mandrills aren't embarrassed. Their red and blue noses make them look scary to other animals. What they seem to be saying, says primate researcher Dr. Kenneth Gould, is "Hey, I'm mean." The brightest-colored mandrills are usually the bosses of a troop.

As a male mandrill gets older, the colors on his face get brighter. "Now, the message he's giving is 'I'm grown up and mature,'" says Dr. Gould. When a male gets mad, the red turns even brighter. This lets other animals know to stay out of his way.

PHOTO © TOM ANGERMAYER / PHOTO RESEARCHERS INC.

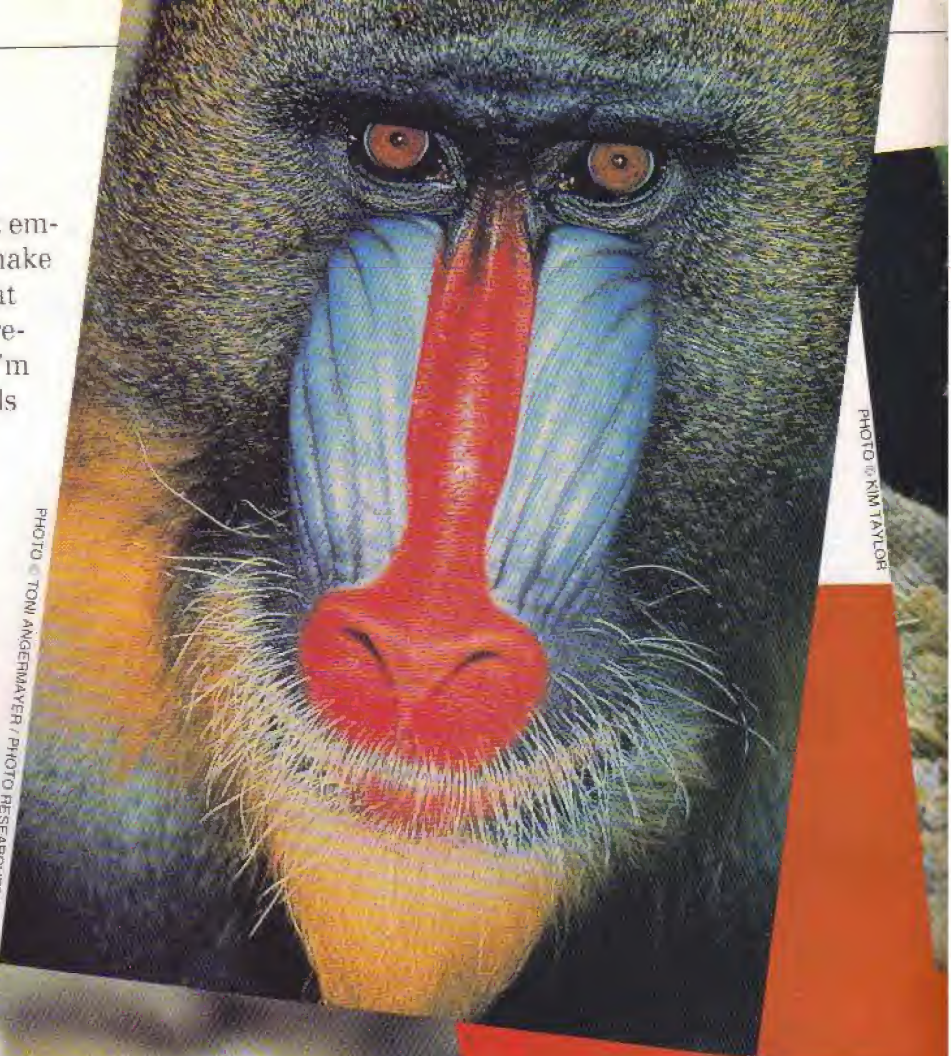


PHOTO © KIM TAYLOR



PHOTO © FRANKS LANTING / MINDEN PICTURES

RED-DY TO EAT

When they're hungry, herring gull chicks know exactly what to do. They head for the red—the red spot on their mother's beak! A few pecks on this spot let their mother know the chicks want food. The mother then spits out partly chewed-up fish for her babies to eat. How's that for an ABC (already been chewed) meal?



RED BELLIES

Sounds fishy but it's true: Female sticklebacks (they're small fish) prefer males with the brightest red on their bellies. The reason? Females know that a male's belly turns red when he's ready to mate. The brightness of the red also lets females know that the male is healthy. Which means he's more likely to produce healthy little sticklebacks.



PHOTO © KYLE B. SANDVED / PHOTO RESEARCHERS INC.



RED-FEATHERED FRIENDS Some people say "you are what you eat." But scarlet ibises are the color of what they eat. These South American birds get their brilliant color from a diet of red crabs. If scarlet ibises go without red-colored foods, their new feathers won't grow in red. Why is it important their feathers stay red? Because that color makes it easy for them to spot each other and flock together.

PHOTO © TOM AND PAT LEESON / PHOTO RESEARCHERS INC.

HOT SHOTS

Female fireworms are hot stuff! Their red glow makes them look like they're on fire. And ouch! The bristly sides of these underwater worms contain a poison that burns. If a human or other animal touches the sides, they'll feel like *they're* on fire.

A CONTACT EXPERIMENT

COLORFUL WORDS

What to Do:

Look at the words on the right. But don't read them. Instead say the colors they are printed in. Say them out loud and as fast as you can.

red

orange

yellow

green

blue

red

blue

yellow

green

blue

What Happened:

Most people who have tried this activity read the words "red, yellow, green..." instead of the colors they are printed in, "blue, green, red..." People who study human behavior call this interference. When you look at one of the words, you see its color and its meaning. But if the color and the meaning are different, you must make a choice.

Most people think that the meaning of a word is more important than the color of the ink it is written in. But we asked you to pay attention only to the color of the ink. Your brain got confused and interference took place.

Try the experiment on your parents, your friends and your teachers. Was anyone's brain *not* interfered with?

CRAZY CAR CONTEST WINNERS

Wow! The six winners of our Crazy Car Contest (November '92 issue) were so great, we were driven to print them. Congratulations to everyone who entered.

Grand Prize:
A Kodak
Sketch Case

The Clean Machine

This speedy vehicle really cleans up after itself. It dusts. It vacuums. And it never needs a car wash!

*Timothy Lin, age 13
San Mateo, CA*

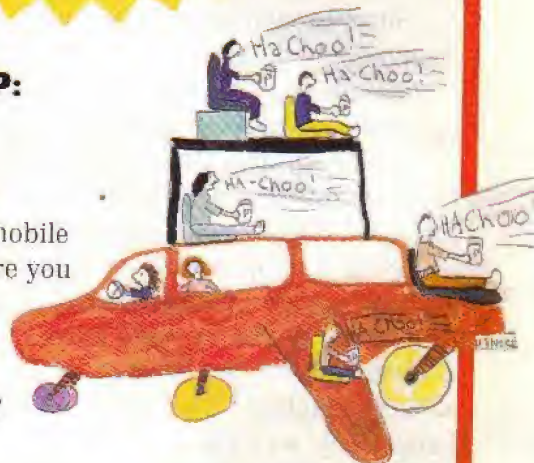


FIVE RUNNERS-UP: Contact T-Shirts

Sneeze Mobile

Ha-hoo! The sneeze mobile runs by sneezes. The more you sneeze, the faster you go. But don't forget your pepper.

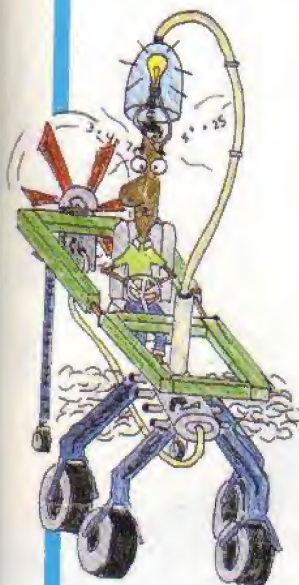
*Sara Sakamoto, age 11
Honolulu, HI*



Brain Power

To drive this car, you'll have to be a scholar. This roadster runs on brain power!

*Eugene Chiu, age 13
Macungie, PA*



The Troll Patrol

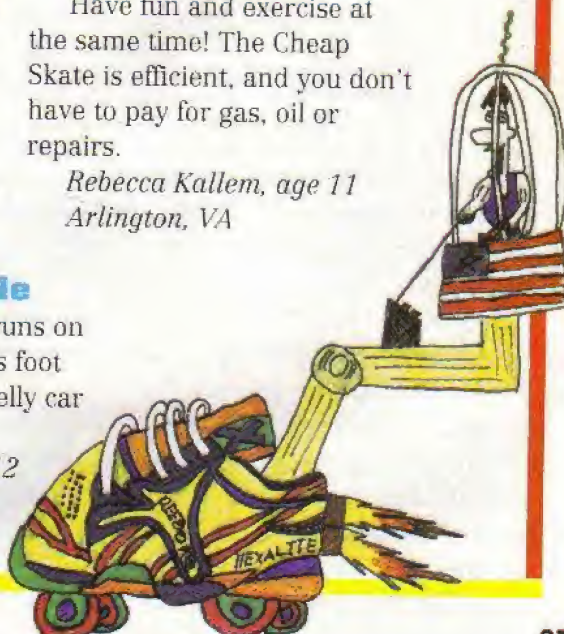
Ready to wish? Make a wish to get this car going.
*Patricia Garman, age 11
Columbia, PA*



The Cheap Skate

Have fun and exercise at the same time! The Cheap Skate is efficient, and you don't have to pay for gas, oil or repairs.

*Rebecca Kallem, age 11
Arlington, VA*



Odor Mobile

This machine runs on foot odor. Athlete's foot really gets this smelly car zooming.

*Jacob Obin, age 12
Norwood, MA*



THE TIME TEAM

Lost and Found

By Curtis Slepian

"Could you help me cross the street?" asked the blind man.

"Sure," answered Jenny Lopez. When the light changed, she helped walk him across the street.

"Thank you," he said, continuing on his way.

Jenny thought, "Being disabled is tough."

Strolling to the library, Jenny heard a shout. Then Sean Nolan jogged up beside her. "Didn't you hear me call you?" he asked.

"What do you want?" said Jenny impatiently.

"You said we'd time travel," Sean answered.

"I'd rather read a good book."

Sean's face fell. "You promised," he whined.

Jenny sighed. "You are the world's biggest baby. Okay, let's go."

They went to Jenny's house. In her room was her tachyon machine. It was a science fair project. But Jenny had never handed it in. That's because Sean and Jenny discovered it could send them through time. So they kept it a secret.

Turning a Deaf Ear

Jenny took out the laser-powered time machine and pressed the start button. In a flash, the teens disappeared. When they reappeared, a loud explosion went off close to Jenny. It was a firecracker. "Happy Fourth of July!" yelled the person who threw it.

Jenny shook her head. "Are you okay?" asked Sean. "C'mon. Answer me."

Jenny was confused. "I can't hear you."

Something was wrong. Jenny didn't hear any sounds. Not even her own voice. She started to panic. "Sean, the firecracker made me deaf!"

Just then, a police officer came over. He wore an old-fashioned high hat. He had a handlebar

mustache. "What's the problem here, folks?"

Sean said, "My friend lost her hearing."

"Where did she lose it?" chuckled the officer.

"It's no joke! She needs help," pleaded Sean.

The officer felt bad. "Well, they might be able to help." He pointed to a large building down the street. "That's the Perkins Institution for the Blind. They teach deaf and blind people."

On the way there, Sean found a newspaper. It was dated July 4, 1890. Jenny didn't care what year it was. She was frightened.

To her, the world was completely silent.

At the Perkins Institution, a woman told Sean, "Go inside. Dr. Anagnos will help you. He's the head of Perkins."

A man in a long black coat came out. He was Michael Anagnos. He looked in Jenny's ears. He struck a tuning fork and placed it by her ear. She couldn't hear it vibrate. The doctor took out a pad and wrote her a note: "I don't know if the damage to your ears is permanent. But if you'd like, we can help you adjust to being deaf."

Jenny started to cry. Anagnos told Sean, "When your friend decides what to do, tell me." He left



ILLUSTRATIONS BY BOB LARKIN

the pad and pencil. Sean wrote a note and handed it to Jenny: "Let's go home. The doctors in our time know more. They can help you."

Jenny shook her head. "NO! I'll never hear again. I won't be able to do things everyone else can. My friends will think I'm weird...different."

"Give me the machine," Sean scribbled.

"No. I'm staying!" said Jenny.

Sean grabbed the tachyon machine out of her hand. Jenny screamed. Before Sean could press the button, two men rushed into the room and pulled him away. "Leave her alone!" yelled Anagnos. "Remove him from the building."

Out in the street, Sean sat on the steps of the Institution. "This is the pits," he thought.

The Sounds of Silence

Inside, Jenny sat by herself, trying to stay calm. But she couldn't help crying: "I'll never hear again—hear my parents and friends, hear the ocean, hear music. I'll never even hear my own voice." The world seemed cut off from her. It was like watching TV with the sound off. Nothing made sense.

Jenny began

to sob again. Anagnos entered the room with a young girl. He wrote on the pad: "I want you to talk with this 10-year-old. Her name is Helen."

Helen wrote: "I know how you feel. I can't see, hear or speak."

Wiping her tears, Jenny read the words with amazement. Helen was worse off than she was! Helen then wrote, "Are you sad? Say it out loud."

If Helen was deaf, how could she understand Jenny? Suddenly, Helen gently placed a hand on Jenny's mouth. Jenny was surprised, but said, "Yes. I'll never live a normal life."

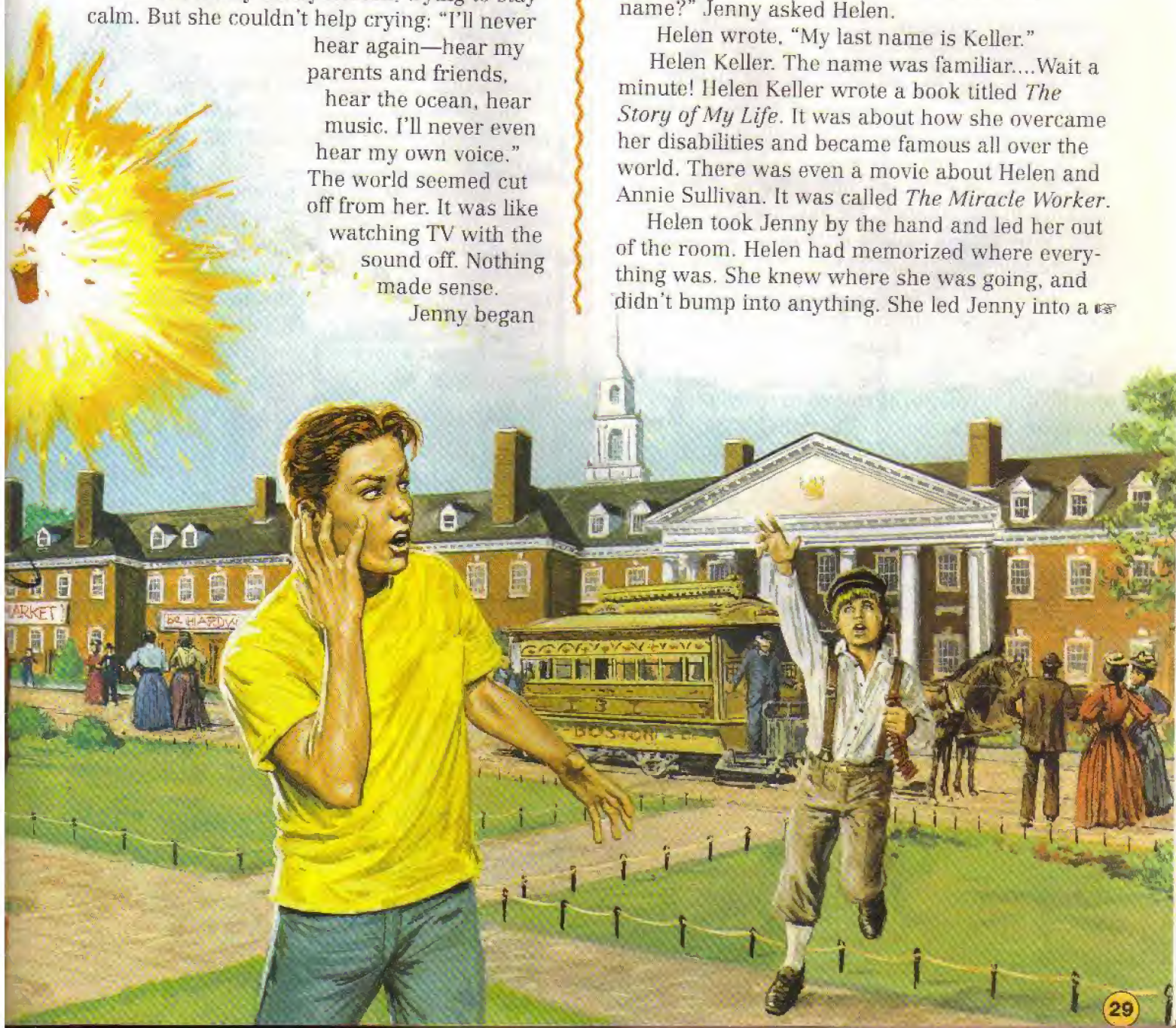
Helen shook her head and wrote: "I can do just about anything anyone else can. I can understand what you say by touching your lips. Thanks to my teachers, especially Annie Sullivan, I can talk by sign language. And I know how to write."

Helen was awesome! "What's your last name?" Jenny asked Helen.

Helen wrote, "My last name is Keller."

Helen Keller. The name was familiar...Wait a minute! Helen Keller wrote a book titled *The Story of My Life*. It was about how she overcame her disabilities and became famous all over the world. There was even a movie about Helen and Annie Sullivan. It was called *The Miracle Worker*.

Helen took Jenny by the hand and led her out of the room. Helen had memorized where everything was. She knew where she was going, and didn't bump into anything. She led Jenny into a



classroom. Here, kids who were blind and deaf learned to "talk" and "listen" with their hands. Areas on the hand represented different letters. By touching different parts of the "listener's" hand, you could spell out words. The person would understand the words, and reply the same way.

Jenny was impressed. But she still felt depressed about not hearing. She placed Helen's fingers to her lips and said, "Don't you sometimes feel sad?"

Helen jotted this: "I don't have time to feel sorry for myself. I'm too busy learning things."

Jenny thought about her words, as they walked back to the doctor's office.

Bell Tells

Meanwhile, outside the Perkins Institution, Sean was also bummed out. He couldn't leave Jenny. If he pressed the button on the tachyon machine and went home, he'd probably never see her again. But he couldn't stand out here for the rest of his life.

At that moment, a tall man paused at the entrance to the building. He looked at Sean and said, "Why do you look so unhappy, young man?"

Sean told him about Jenny.

"Maybe I can help her. I'm a teacher of the deaf. But first you should contact your parents."

"Yeah," said Sean bitterly. "Like E.T., I should phone home."

The man replied, "If you want to telephone someone, you've come to the right person. I'm Alec Bell. I invented the telephone 14 years ago."

"You're Alexander Graham Bell?" gasped Sean. "I thought you were an inventor. How come you also teach deaf people?"

"That's been my life's work. Helping deaf people gave me the idea to create the telephone."

"Oh, wow!" exclaimed Sean. "This is such an excellent moment in history!"

Bell didn't know what Sean meant. But he said, "Let's go in and see about your friend."

Inside Perkins, they found Helen and Jenny sitting together.

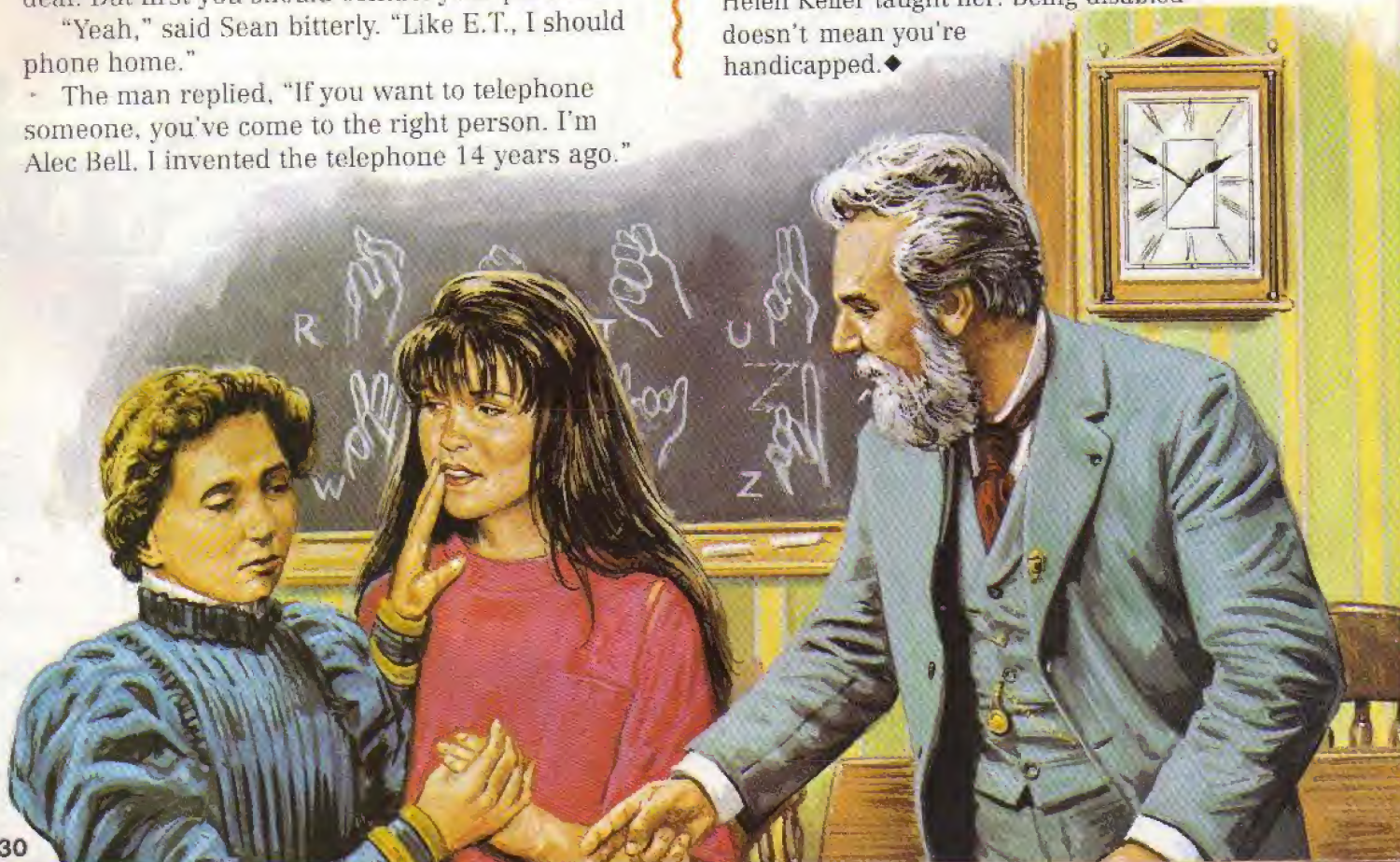
"Helen and I are old friends," said Bell. "She is my favorite student."

Sean penned a note to Jenny: "Maybe Alexander Graham Bell can help you."

"He doesn't have to," answered Jenny. "After talking with Helen, I realize that a deaf or blind person can live a normal life. I'm ready to go home." She said goodbye to Helen Keller, and Sean said goodbye to Alexander Graham Bell.

Outside Perkins, the teens beamed back to Jenny's house. They arrived a second after they had left it.

That afternoon, Jenny's parents took her to a doctor. He said her condition was probably temporary. And he was right. She got her hearing back completely in three days. Jenny soon forgot about her hearing problems. But she never forgot what Helen Keller taught her: Being disabled doesn't mean you're handicapped. ♦



CONTACT CONTEST

The Contest:

Batter up! Take a swing at this baseball crossword. The clues are pictures! To solve it, fill in the names of the pictured objects in the correct spaces in the grid. We've filled in a few to get you started. When you're finished, read the letters in the shaded boxes, from top to bottom and from left to right. The letters will spell out the answer to this riddle:

Why was Baseball Bob happy when he heard "Strike Three!"?

To Enter: On a postcard or on the back of an envelope, write the answer to the riddle. Send it to:

Play Ball!

3-2-1 CONTACT Magazine

P.O. Box 40

Vernon, NJ 07462

Be sure to include your name, address and age.

In case of a tie, winners will be chosen by a drawing. All entries must be postmarked by May 15, 1993. Contest entries become the property of CTW and cannot be returned. The decision of the judges is final.

Grand Prize:

A Speedy Tabletop Rollercoaster

Second Prize:

A Digital Ancient Hourglass

Third Prize:

A Nature Crafts Kit and Book

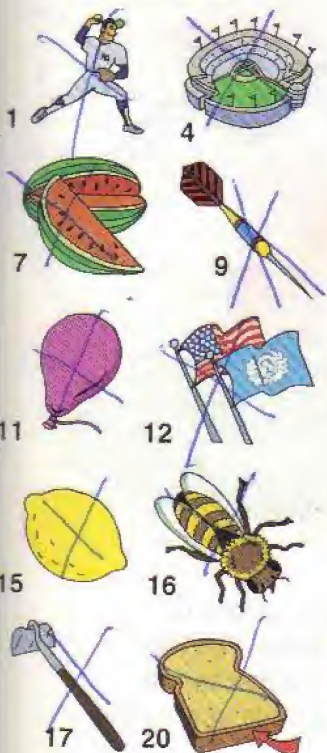
Five runners-up:

A 3-2-1 CONTACT T-shirt

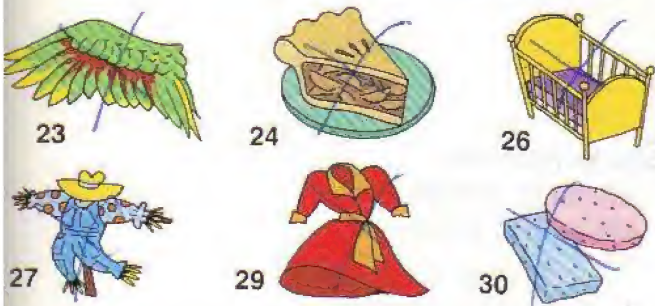
PLAY

BALL!

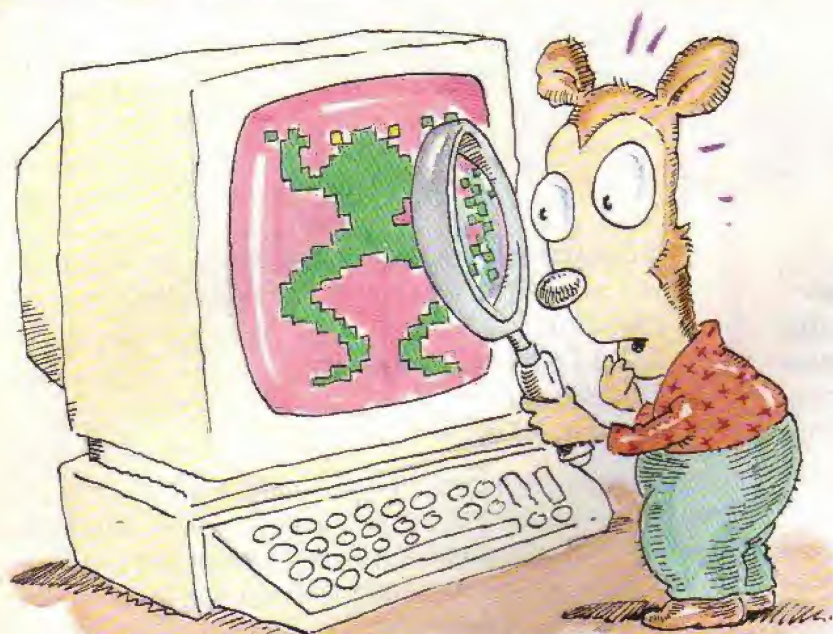
ACROSS



DOWN



FACT



▲ The images on a computer screen are made up of more than 5,000 pixels, or dots, per square inch.



▲ The Andromeda Galaxy is the farthest object you can see without a telescope. It is two million light years away.

▲ Sharks have been around for almost 400 million years.

Olds

▼ The first movie theaters were called nickelodeons because they only charged a nickel for admission.



▲ The smallest adult dinosaur, *Compsognathus* (say: *komp-so-NAY-thus*), was 30 inches high—about the height of a St. Bernard dog.

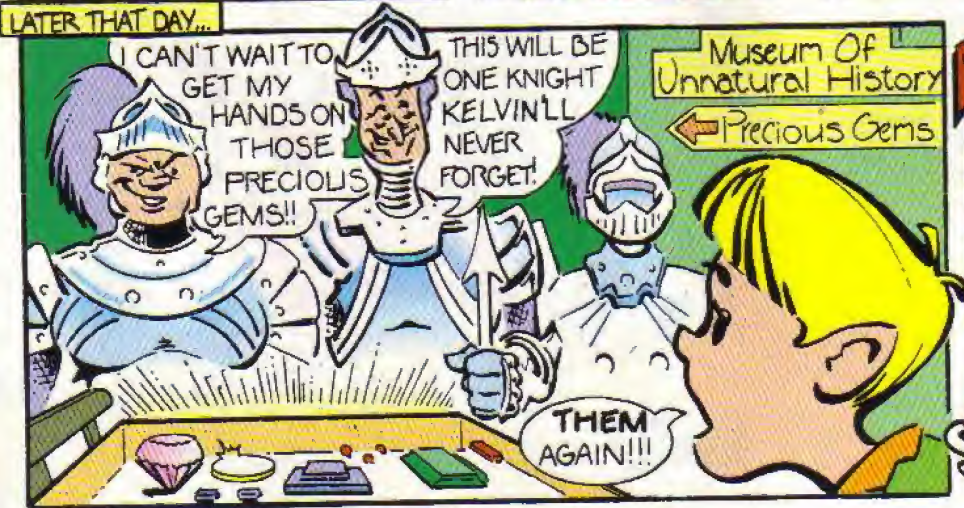
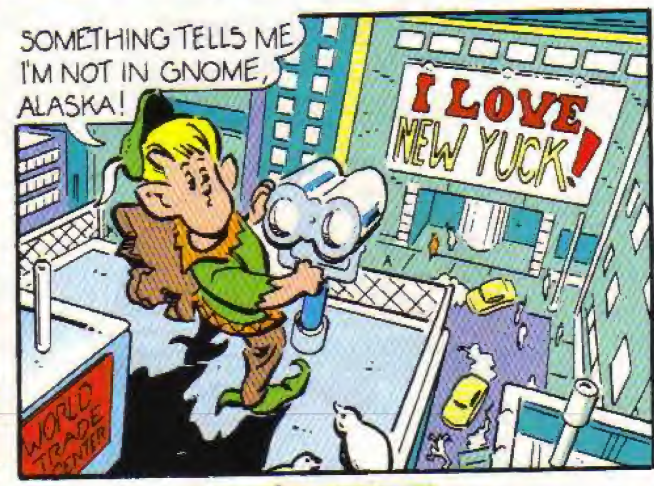
▼ The skin on the sole of your foot is about 40 times thicker than any other skin on your body.

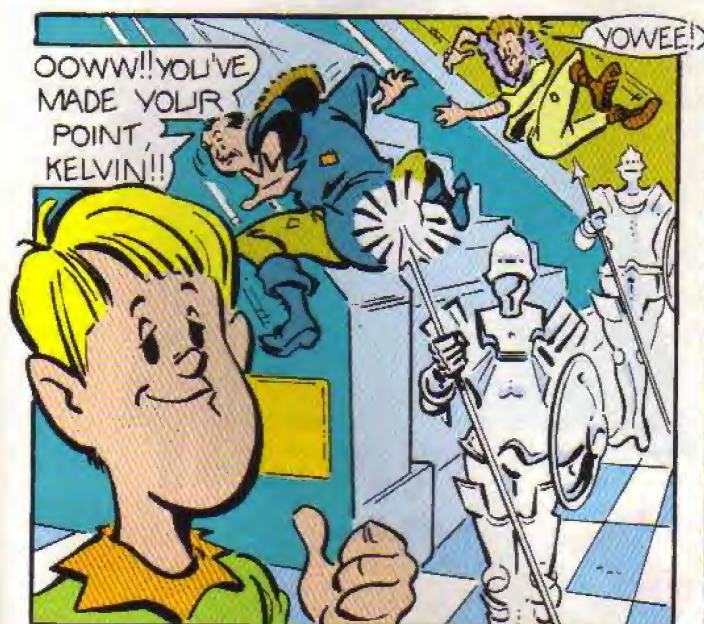
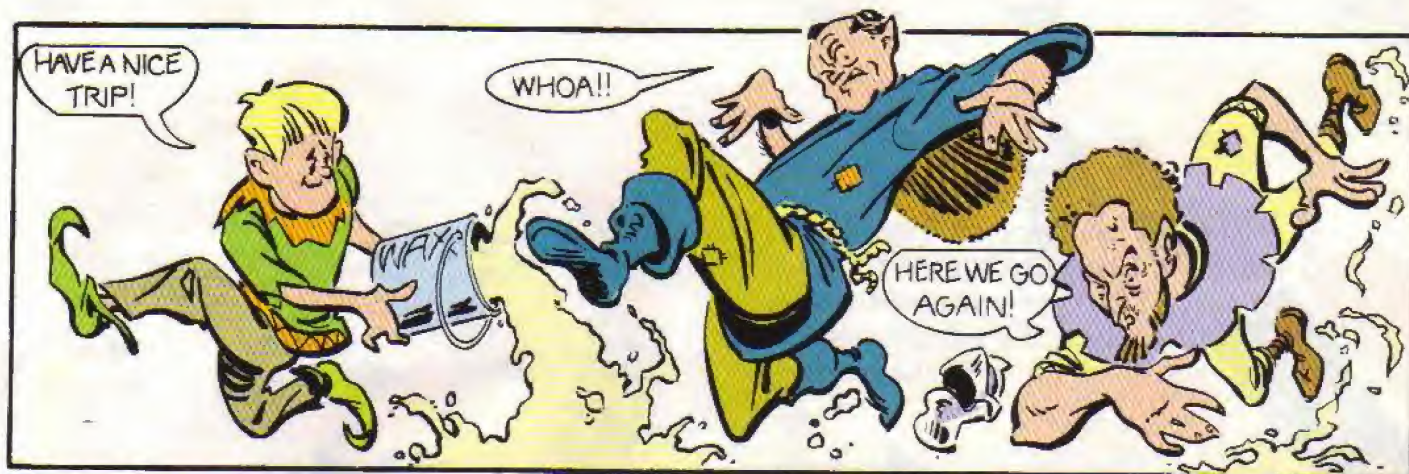


ILLUSTRATIONS BY CHARLES PEALE

GNOME ALONE

WRITTEN BY BETH CHAYET **2** ART BY AL BIGLEY





ONLY ONE ROPE
WILL MAKE A KNOT WHEN
IT'S PULLED...
THE OTHER TWO
WILL UNTIE AND THE TROLLS
WILL CRASH-LAND!
TO SAVE THEMSELVES,
WHICH ROPE SHOULD
THE TROLLS GRAB?
TURN TO THE DID-IT PAGE
FOR THE ANSWER!

By Beth Chayet

PENCIL PUZZLE

We bet you can't write the number 100 (not in words) without lifting your pencil off the paper. (Hint: Fold down the top of the paper before you write the number.)



JAMMING

Arrange the three guitar players so the numbers on their guitars form a three-digit number that can be divided evenly by seven. (Hint: Before you flip out, try flipping one of the guitar players upside down.)



If a butcher is five feet, six inches tall, what does he weigh?

P U Z Z L E S

BUS STOP

HEAD COUNT

At the bus stop, Jill saw a bunch of people and dogs standing around. She counted a total of 22 heads. She also counted a total of 68 legs. How many people and how many dogs were standing around? (Hint: Start with the same number of each. So, 11 dogs x 4 legs = 44 legs, 11 people x 2 legs = 22 legs. This is only a total of 66 legs. Keep trying different numbers.)

ILLUSTRATIONS BY JOLYNN ALCOORN

MENTAL MATH

Show off your amazing mental powers! Tell your friend you can guess what coins are in his or her hand.

1. Ask your friend to put a penny in one hand and a quarter in the other hand—without letting you see which coin is in which hand.

2. Then tell your friend to multiply—mentally—the value of the coin in the right hand by 16. When finished multiplying, he or she should nod. Then, ask your friend to multiply the value of the coin in the left hand by 16. Have your friend nod again when finished.

3. Now tell your friend which hand has which coin. How'd you do it?



Answers on the Did It page.

EXTRA!

By Beth Chayet

Send Junk Food

NASA scientist Emma Earthling is searching for alien life. So she beamed the question "What are your favorite snack foods?" into outer space.

Some aliens spelled out their answer in the sky. To figure it out, write down the letters (from left to right, top to bottom) that have a star on both sides of them. The letters answer Emma's question.

We beamed the answer to the Did It page.

SEF ★ WE ★ L ★ OPE

★ IKE ★ UID

★ MAR ★ T ★ CAT

★ IANM ★ ALL ★ RES

MOP ★ OWS ★ TR

★ AND ★ MI ★ LKY ★ PK

MEGI ★ WAYS ★ !

Red Rover

This fill-in will make you see red—the word red, that is. But if you fill in the blanks with the correct letters, you'll make new words that answer the clues beside them.

The answer should be read on the Did It page.

RE _ D What you do with a book

_ RE _ D Part of a sandwich

_ R _ D Used with a needle to sew

RED _ _ _ Decrease to lose weight

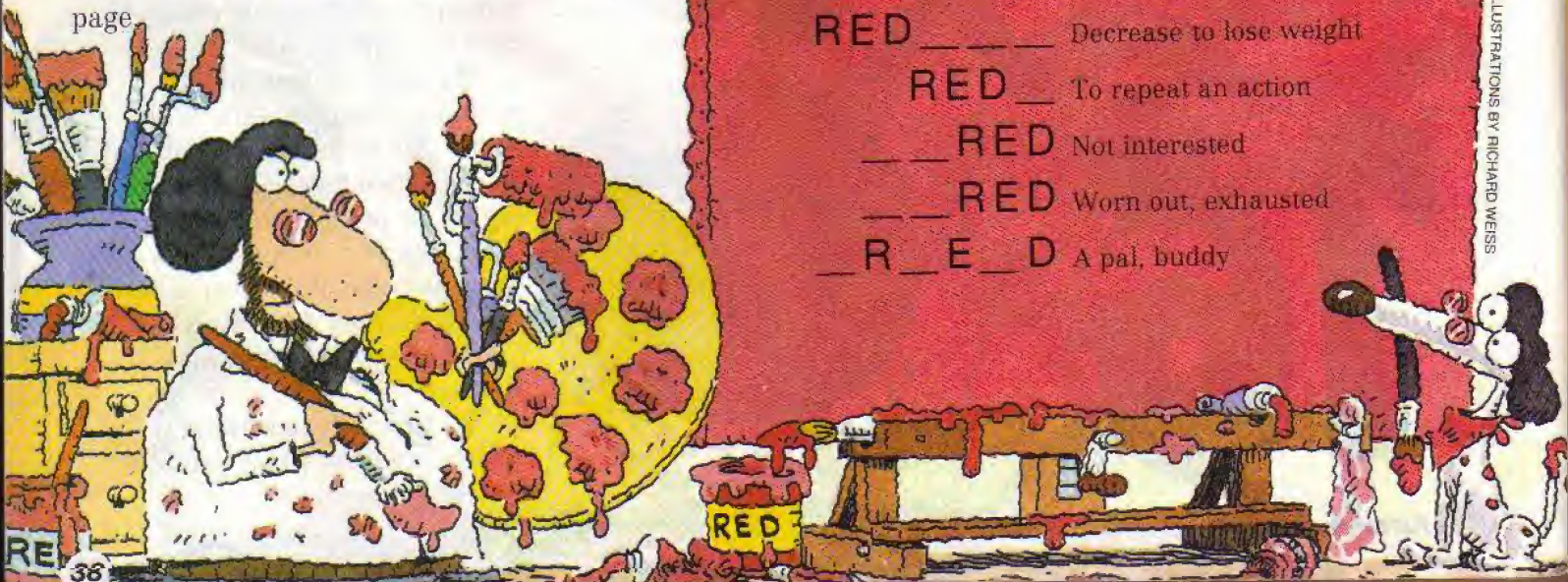
RED _ _ To repeat an action

_ _ RED Not interested

_ _ RED Worn out, exhausted

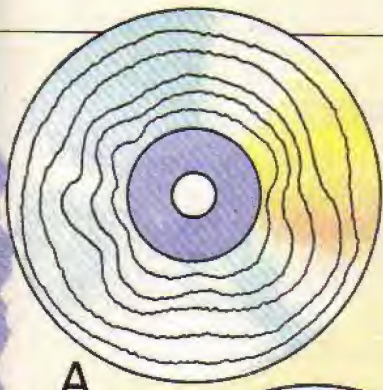
_ R _ E _ D A pal, buddy

ILLUSTRATIONS BY RICHARD WEISS

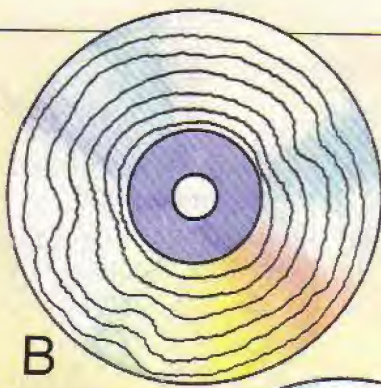


Pit Stop

Can you help Squeegee and Hairy-o find the two identical CD's in this collection?
Spin to the Did It page for the answer.



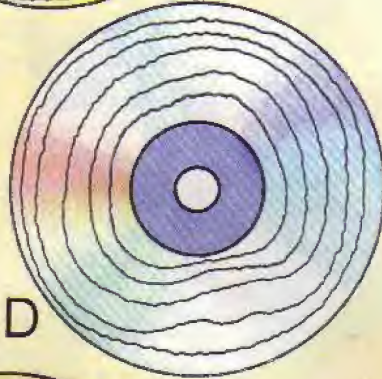
A



B



C



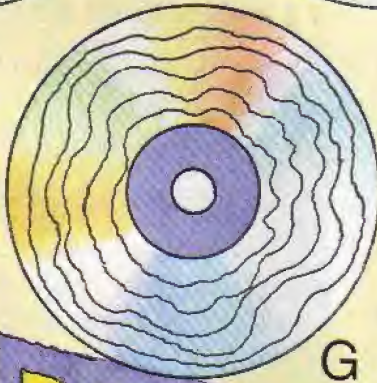
D



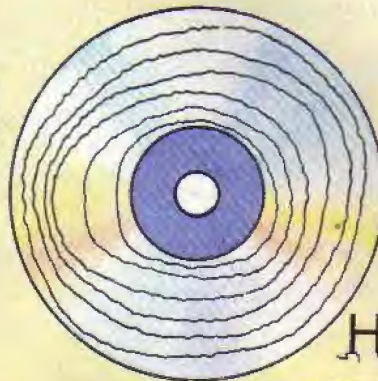
E



F



G



H



I



Did it

SEND JUNK FOOD

The aliens' message is: "We like martianmallows and milky ways!"

RED ROVER

Read, bread, thread, reduce, redo, bored, tired, friend.

PIT STOP

C and I are the same.

WEIGHTY PROBLEM

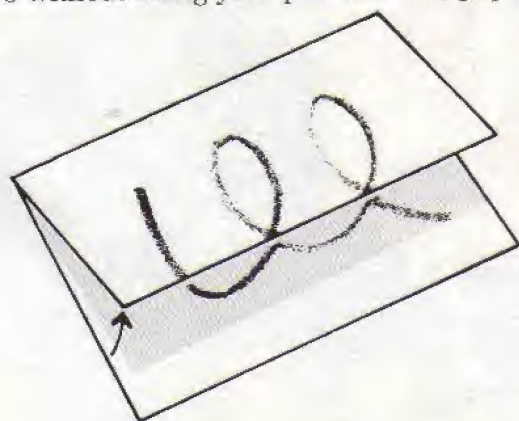
The butcher weighs meat. (Ha!)

MENTAL MATH

Here's how you did it. Your friend won't take long to multiply a penny (1) by 16. Multiplying the quarter (25) by 16 will take much longer. So the coin that takes the longest to multiply is the quarter.

PENCIL PUZZLER

This illustration shows how you can write 100 without lifting your pencil off the paper.



JAMMING

✕ When the guitar player with the number 6 stands on his head, his number becomes 9. The three of them can form the number 931. And 931 divided by 7 equals 133.

HEAD COUNT

✂ Ten people (20 legs) and 12 dogs (48 legs) were standing at the bus stop. The total number of legs equals 68.

NEXT MONTH

☆ What's coming up in June? You'll find out soon—in the next issue of CONTACT:

SAND-SATIONAL SCULPTURES!

✂ What do you get when you mix sand, water and sun? Fun! Here's the scoop on some super sand castles.

PLANET IN A BOTTLE

✂ Eight people have sealed themselves in a giant greenhouse called Biosphere II. It's an experiment to see how Earth (Biosphere I) works. But some people say the experiment isn't working. Find out the problems and the pluses of living in a glass house.

PET PEEVES

✂ Your dog chases cars. Your cat won't use its litter box. Your parrot squawks all night long. What's a pet owner to do? Call a pet psychologist. Read how they help work out your pet's problems.

PLUS

CONTACT CONTEST

FACTOIDS

COMICS



A Rainbow Masterpiece

Panda Painter™, artist extraordinaire, creates art unlike anything anyone has ever seen! It's not just the talent he possesses to paint so well, but it's also the special paint he uses that makes his paintings different from any others. You see, he uses rainbow paint that he actually gets from the rainbow. This colorful paint is so brilliant that everything Panda Painter™ paints on canvas will actually come to life! All kinds of friends Panda Painter™ created on canvas now live in his studio! He shares his friends with everyone who loves to have fun and follows their imagination to Panda Painter's art studio located in the Fantastic World of Lisa Frank!

Lisa Frank®

YOU GOTTA HAVE IT!®

Find Panda Painter on Lisa Frank® products at Food, Drug, Toy and Discount Department Stores.



The trail to this treasure is one a-maze-ing journey.

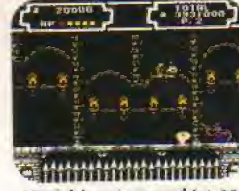
The twists and turns come faster than you can say Scrooge, Webby, Huey, Dewey and Louie, as the DuckTales crew searches 7 puzzling levels to collect pieces of a secret treasure map. From the Egyptian tombs to Niagara Falls, Glomgold and his evil-doer ducks will be on your tail feathers every step of the way. But the most amazing part of all is how much fun this journey will be.



A cane comes in mighty handy when using the cannon to tumble a wall.



When the robo duck's fist flies, Scrooge McDuck gets the jump on him.



With his get up and po-go he avoids the tornado and bits the wizard.